Claims

We claim:

1. A peptidomimetic having the structure shown in formula I:

wherein

 R^1 is selected from the group consisting of alkyl, alkoxy, cycloalkyl, cycloalkoxy, aryl, aryloxy, alkylcarbonyl, alkoxycarbonyl, cycloalkylcarbonyl, heterocycloalkyl, heterocycloalkylcarbonyl, heterocycloalkylcarbonyl, heterocycloalkoxy, or heterocycloalkoxycarbonyl, any of which can be optionally substituted with one or more of the following: any halogen, -CN, -COOH, =O, -OH, -NO₂, -NH₂, -N-alkyl, alkyl, alkoxy, cycloalkyl, cycloalkoxy, aryl, aryloxy, alkylcarbonyl, alkoxycarbonyl, cycloalkylcarbonyl, heterocycloalkyl, heterocycloalkyl, heterocycloalkylcarbonyl, heterocycloalkyl, aryloxycarbonyl, heterocycloalkoxy, and heterocycloalkoxy, and heterocycloalkoxycarbonyl;

or a salt thereof.

- 2. The peptidomimetic according to claim 1, wherein R^1 is aryl optionally substituted with one or more halogen, -CN, -NO₂, -NH₂, -CH₃, or -OCH₃.
- 3. The peptidomimetic according to claim 2, wherein said one or more halogen is, independently, Cl or F.
- 4. The peptidomimetic according to claim 1, wherein R¹ is phenyl substituted with one or more halogen, -CN, -NO₂, -NH₂, -CH₃, or -OCH₃.
- 5. The peptidomimetic according to claim 4, wherein said one or more halogen is, independently, Cl or F.
- 6. The peptidomimetic according to claim 1, wherein R¹ is heteroaryl optionally substituted with one or more halogen, -CN, -NO₂, -NH₂, -CH₃, or -OCH₃.
- 7. The peptidomimetic according to claim 6, wherein said one or more halogen is, independently, Cl or F.

8. The peptidomimetic according to claim 1, selected from the group consisting of:

$$H_3C$$
 H
 CH_3
 CH_2
 H_2N
 N
 CH_2
 $COOH$
 $HO-P=O$
 OH

$$\begin{array}{c|c} & H_3C & H & CH_3 \\ \hline \\ & O & CH_2 \\ \hline \\ & NH_2 & O & CH_2 \\ \hline \\ & NH_2 & O & CH_2 \\ \hline \\ & NH_2 & O & CH_2 \\ \hline \\ & NH_2 & O & CH_2 \\ \hline \\ & O & OH \\ \hline \end{array}$$

$$O_2N$$
 O_2N
 O_3
 O_4
 O_4
 O_5
 O_7
 $O_$

NC
$$H_3C$$
 H CH_3 CH_2 H $COOH$ $HO-P=O$ OH

$$\begin{array}{c|c}
 & H_3C & H & CH_3 \\
 & C & CH_2 \\
 & N & COOH \\
 & N & COOH \\
 & O & CH_2 \\
 & N & COOH \\
 & O & CH_2 \\$$

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$$H_2N$$
 O
 CH_2
 H_3C
 CH_2
 $CH_$

$$\begin{array}{c|c} & H_3C & H & CH_3 \\ \hline & O & CH_2 \\ \hline & N & COOH \\ \hline & O & CH_2 \\ \hline & O & CH_2 \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O & COOH \\ \hline & O & CH_2 \\ \hline & O &$$

$$\begin{array}{c|c} & H_3C & H & CH_3 \\ \hline & O & CH_2 \\ \hline & N & COOH \\ \hline & O & CH_2 \\ \hline & N & COOH \\ \hline & O & CH_2 \\ \hline & O &$$

and

$$H_3C$$
 C
 CH_2
 H_3C
 CH_2
 CH_2
 $COOH$
 CH_2
 $COOH$
 CH_2
 $COOH$
 CH_2
 $COOH$
 CH_2
 $COOH$

- 9. A composition comprising a peptidomimetic of claim 1 in a pharmaceutically acceptable carrier or diluent.
- 10. A method for inhibiting growth or replication, or inducing apoptosis in a target cell, said method comprising contacting the target cell with a peptidomimetic of claim 1.

11. The method according to claim 10, wherein said peptidomimetic is selected from the group consisting of:

$$\begin{array}{c|c} H_3C & H & CH_3 \\ \hline \\ H_3C & H & CH_2 \\ \hline \\ H_3C & H_3C & CH_3 \\ \hline \\ H_4 & CH_2 \\ \hline \\ N & COOH \\ \hline \\ HO & P=O \\ \hline \\ OH \\ \end{array}$$

$$O_2N$$
 H_3C
 C
 CH_2
 H_3C
 CH_2
 CH_2
 $COOH$
 CH_2
 $COOH$
 $COOH$
 $COOH$

NC
$$H_3C$$
 H CH_3 CH_2 H $COOH$ $HO-P=O$ OH

$$H_3C$$
 H
 CH_3
 CH_2
 N
 CH_2
 N
 $COOH$
 CH_2
 N
 $COOH$
 CH_2
 N
 $COOH$
 $COOH$
 $COOH$

$$H_3C$$
 H
 CH_3
 CH_2
 H
 $COOH$
 CH_2
 HO
 P
 $COOH$

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$$\begin{array}{c|c} H_3C & H & CH_3 \\ \hline \\ O & CH_2 \\ \hline \\ N & COOH \\ \hline \\ O & CH_2 \\ \hline \\ N & COOH \\ \hline \\ O & CH_2 \\ \hline \\ O & C$$

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$$\begin{array}{c|c} & H_3C & H & CH_3 \\ \hline & O & CH_2 \\ \hline & N & COOH \\ \hline & O & CH_2 \\ \hline & N & COOH \\ \hline & O & CH_2 \\ \hline & O &$$

and

12. A method for treating a tumor or an oncological disorder in a human or animal, said method comprising administering an effective amount of a peptidomimetic of claim 1 to the human or animal.

13. The method according to claim 12, wherein said peptidomimetic is selected from the group consisting of:

$$H_3C$$
 H
 CH_2
 H_2N
 H_2N
 $COOH$
 CH_2
 $HO-P=O$
 OH

$$\begin{array}{c|c} & H_3C & H & CH_3 \\ \hline \\ & O & CH_2 \\ \hline & N & COOH \\ \hline \\ & NH_2 & O & CH_2 \\ \hline \\ & O & COOH \\ \hline \\ & O & CH_2 \\ \hline \\ & O & COOH \\ \hline \\ &$$

$$O_2N$$
 O_2N
 O_3
 O_4
 O_5
 O_5
 O_7
 $O_$

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$$\begin{array}{c|c}
 & H_3C & H & CH_3 \\
 & C & CH_2 \\
 & N & COOH \\
 & N & COOH \\
 & O & CH_2 \\
 & N & COOH \\
 & O & CH_2 \\$$

$$H_3C$$
 H_3C
 H_4
 CH_2
 CH_2
 H_4
 $COOH$
 $HO-P=O$
 OH
 $HO-P=O$

$$H_3C$$
 H
 CH_2
 H
 N
 $COOH$
 $HO-P=O$
 OH

and

$$H_3C$$
 CH_2
 H_3C
 CH_2
 CH_2
 CH_2
 CH_2
 $COOH$
 CH_2
 $COOH$
 $COOH$
 $COOH$
 $COOH$
 $COOH$

14. The method according to claim 12, wherein said tumor or oncological disorder is selected from the group consisting of breast, kidney, mouth, larynx, esophagus, stomach, testis, cervix, head, neck, colon, ovary, lung, bladder, skin, muscle, pancreas, prostate, bone, eye, blood cells, and brain.

15. A peptidomimetic having the formula:

$$R^1Y*L$$

wherein

 R^1 is selected from the group consisting of alkyl, alkoxy, cycloalkyl, cycloalkoxy, aryl, aryloxy, alkylcarbonyl, alkoxycarbonyl, cycloalkylcarbonyl, heteroalkyl, heterocycloalkylcarbonyl, heteroarylcarbonyl, aryloxycarbonyl, heteroaryloxycarbonyl, heterocycloalkoxy, or heterocycloalkoxycarbonyl, any of which can be optionally substituted with one or more of the following: any halogen, -CN, -COOH, =O, -OH, -NO₂, -NH₂, -N-alkyl, alkyl, alkoxy, cycloalkyl, cycloalkoxy, aryl, aryloxy, alkylcarbonyl,

alkoxycarbonyl, cycloalkylcarbonyl, heteroalkyl, heterocycloalkyl, heterocycloalkylcarbonyl, heteroaryl, arylcarbonyl, heteroarylcarbonyl, aryloxycarbonyl, heterocycloalkoxy, and heterocycloalkoxycarbonyl;

Y* is phosphotyrosine, or any analog thereof; L is leucine, or another non-polar amino acid; or a salt thereof.

16. The peptidomimetic according to claim 15, wherein L is alanine or valine.